

Idaho Currents

Executive Order Establishes Office of Energy Resources; Governor Appoints Administrator

In order to give Idaho's Governor more direct control over the state's energy policies, Gov. C.L. "Butch" Otter created the Office of Energy Resources within the Governor's Office.

The new Office, created by Executive Order No. 2007-11 on Sept. 4, replaces the Energy Division – one of three divisions in the Idaho Department of Water Resources.

"It is the responsibility of state government to explore energy production and employ measures to reduce wasteful, uneconomical and unnecessary uses of energy, which diminish Idaho's energy resources," Otter wrote in the executive order.

The Office of Energy has come full circle in 33 years. The original office was created in 1974 as part of the Governor's Office. In 1981, it merged with the Idaho Department of Water Resources by Executive Order, and was a bureau within the Resource Analysis Division.

IDWR reorganized in November 1988, and the Energy Bureau was elevated to Division status. Former governor and current Interior Secretary Dirk Kempthorne issued the final Energy Division executive order in 2001. It expired in 2005.

New Administrator

Gov. Otter appointed Paul Kjellander to head the new Office of Energy Resources. Kjellander comes



Paul Kjellander

from the Idaho Public Utilities Commission, where he served as president.

"Paul is uniquely prepared to tackle the job of raising the profile of and increasing our focus on meeting Idaho's future energy needs," said Otter in a recent press release. "His experience on the Public Utilities Commission and his ability to work well with all the state agencies, stakeholders and citizens involved in energy policy are qualities that will help ensure this new office has the dynamic leadership it needs."

The Office will remain in the Idaho Water Center.

Insulation Increases Comfort, Reduces Energy Use

How do you know if your home has “enough” insulation? It’s one of those questions that doesn’t have a quick answer.

If you live in a recently constructed home that is certified Energy Star, the insulation was installed according to Energy Star requirements, so it’s in good shape. If your home is more than 20 years old, it may be a good idea to find out the status of the insulation.

Many people think their home’s insulation is “good enough,” when they really don’t know how much is sufficient. Nor do they know if it could be better, which would mean lower heating and cooling bills and more comfortable rooms.

“Insulation is one of the most cost-effective ways to save energy in your home,” says Tim O’Leary, senior energy specialist with the Office of Energy Resources. “Adding insulation can pay back in less than a year in most cases.”

Types of Insulation

Although insulation can be made from a variety of materials, it usually comes in four types – each with different characteristics.

Rolls or batts (or blankets) – are flexible products made from mineral fibers, such as fiberglass or rock wool. They are available in widths suited to standard spacings of wall studs and attic or floor joists: 2x4 walls can hold R-13 or R-15 batts; 2x6 walls can have R-19 or R-21 products.

Loose-fill insulation – usually made of fiberglass, rock wool, or cellulose – comes in shreds, granules, or nodules. These small particles should be blown into spaces using special pneumatic equipment. The blown-in material conforms readily to building cavities and attics. Therefore, loose-fill insulation is well suited for places where it is difficult to install other types of insulation.

Rigid foam insulation – foam insulation typically is more expensive than fiber insulation. However, it’s very effective in buildings with space limitations and where higher R-values are needed. Foam in-

sulation R-values range from R-4 to R-6.5 per inch of thickness, which is up to two times greater than most other insulating materials of the same thickness.

Foam-in-place insulation – spray applied foam products that can be used in attics and floors where they can expand without being restricted. Applying the materials inside closed cavities, such as sheet-rocked walls, can result in damage due to material expansion, so they are not typically used as wall insulation on retrofits.

Home Inspection

You can perform this inspection yourself or hire an expert to audit and test your home. A list of Home Performance Specialists certified by the Residential Energy Services Network can be found at www.idahoenergystar.com.

When looking in your attic and crawl space, measure the depth of the insulation, which will help you convert it to the R-value. At this point, it doesn’t matter what type of insulation is there, what’s important is how much, according to O’Leary.

Idaho didn’t have a minimum energy code for residential construction until 1991, when the Idaho Residential Energy Standards were adopted. So if your home doesn’t have adequate insulation, should you make arrangements to have some installed?

“The more insulation you have in your home, the more energy you’ll save and the more comfortable you will be in the summer and winter,” says O’Leary, “especially with the cost of energy periodically rising.”

Inside your attic, you should try to measure in two or three different areas. Sometimes there is insulation in the main area of the attic, but not much, if any, under the eaves. Fiberglass ceiling insulation provides good cost-to-benefit ratio up to about 16 inches, with at least 12 inches minimum.

Walls should be filled with the most insulation possible for the cavity. Floors should have 10-inch fi-

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DOE Website Targets K-12 Energy Education

The U.S. Department of Energy has launched a new educational website that provides more than 350 lesson plans and activities on energy efficiency and renewable energy for grades K-12.

DOE's new "Get Smart About Energy!" website includes hands-on activities that address energy fundamentals, energy efficiency, sources of energy, and the environmental impacts of energy use. All the activities and lesson plans are aligned with the National Science Education Standards. Teacher guides are included with many of the lessons, and all the materials are free and reproducible.

"The website will help equip today's students with the knowledge and resources to develop cutting-edge energy technologies in the future," says U.S. Secretary of Energy Samuel W. Bodman in a DOE press release.

"By using energy efficiently, students can help us access the cheapest, most abundant, cleanest source of 'new' energy: the energy that we waste every day," Bodman added. "Equipping (students) with the scientific and mathematical knowledge necessary to compete in the global marketplace is vital to our nation's economic growth and competitive edge."

Lesson plans and activities

The new "Get Smart About Energy!" website provides lesson plans and activities by subject and by grade in four-year increments. Subjects include biomass energy, energy basics, energy efficiency and conservation, environment, geothermal energy, hydrogen and fuel cells, hydropower, ocean energy, solar energy, transportation fuels, and wind energy.

All of the lessons include one or more hands-on activities according to the age level that can be conducted in the classroom. The new website is located at <http://www1.eere.energy.gov/education/>. All files are available in a "printable version."

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berglass batts installed between the joists. For most floors, not much more insulation can be installed.

Some homes have insulation installed on the foundation walls. If the walls are fitted with vents, the insulation is ineffective, no matter the thickness. A continuous vapor barrier installed over the ground is also recommended to control moisture migration through the soil.

Adding Insulation

If your home needs insulation, it's a good idea to get bids from several insulation contractors in your area. By looking at your home, insulation contractors can recommend the best type for the situation. Special pneumatic equipment is used to blow the insulation in the attic and walls, so it's not recommended for the do-it-yourself home remodeler.

The amount of insulation will be determined by the amount of space available. If you need insulation in the crawl space, get as much as the space will allow, as well as the vapor barrier on the ground. Too little insulation under the floor could leave cold space that would cause cold floors.

Financing

The Idaho Office of Energy Resources provides a low-interest loan for insulation and other conservation measures in your home. At 4 percent interest for five years, you can borrow between \$1,000 and \$15,000 to finance the cost of insulating your home. The loan also covers upgrading heating systems and water heaters and adding or replacing wood, pellet or gas stoves.

To learn more about the loan program, call the Idaho Energy Hotline at 1-800-334-SAVE or go to the Idaho Office of Energy Resources' website at www.energy.idaho.gov and follow the links.

Ventilation: The Key to Healthy Indoor Air Quality

By Tim O'Leary, Sr. Energy Specialist

Today's manufactured homes are built under tighter restrictions than those built 20 years ago, making them more energy efficient and more comfortable. Both HUD and site-built homes require the building envelope (exterior floors, walls, and ceilings) to be sealed to limit air leakage.

Air leaks into and out of a home through openings in the building envelope for windows, doors, electrical receptacles, light fixtures, plumbing, and so on. These air leaks provide a pathway for heat loss or gain and sound transmission.

In the 1980's, building scientists discovered that if a home is properly sealed to limit heat transfer, drafts, and sound transmission, the natural ventilation of the home that normally happens in the typical leaky home is limited.

Controlled ventilation is needed to avoid stale, stagnant, and even unhealthy indoor air quality, especially if a wood stove or fireplace has been installed. Without ventilation, occupants may experience a variety of illness typically associated with poor air quality.

The technology for providing mechanical ventilation in a home was already known. What was not known was the amount of ventilation that was needed to assure good indoor air quality. Studies performed by the American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE) showed that a small amount of air being removed from a home would permit adequate ventilation.

Exhaust fans

The Northwest Energy Efficient Manufactured Home program requires exhaust fans in the utility rooms or hallways of manufactured homes to provide this ventilation. HUD has since adopted the technology and made it standard in all HUD code homes.

Codes for site built homes currently do not require mechanical ventilation, even though they require homes to be air sealed.

Exhaust fans, referred to as whole house fans, are sized based on home square footage and are intended to be run continuously while the home is occupied. They are specially built to run quietly to keep them from creating a nuisance for the occupants.

When operating, they create a slightly negative pressure difference between the inside air and the outside air. This pressure difference draws a controlled amount of air into the home through naturally occurring openings in the building envelope and removes pollutants, such as carbon dioxide, moisture, and gasses from cleaning products.

Exhaust equipment has come a long way in the last 20 years. The fans in use today are low wattage – less than 25 watts in most cases. This is less than half the energy consumed by a typical porch light. There is obviously harvested energy in the air being exhausted, but it is a small amount compared to uncontrolled ventilation of leaky homes.

Some exhaust units, called Heat Recovery Ventilators, pass the exhaust air by the intake air inside a heat exchanger, providing an opportunity to recover some of the energy that would otherwise be exhausted. This technology is available in many sizes and costs, and can be integrated with the home's heating and air conditioning systems or installed as a stand-alone ventilation system.

The new Energy Star manufactured homes are engineered and constructed to be energy efficient and healthy with a ventilation system that keeps fresh air flowing throughout the home.



Idaho Currents, a bi-monthly newsletter featuring articles on energy issues, is brought to you by the Idaho Office of Energy Resources, 322 E. Front St., Boise, ID 83702, and is supported by the U.S. Department of Energy. Funding from DOE is through the Congressionally-approved State Energy Program. Linda Cawley, Editor; Diane Holt-Stroup, Graphic Design Specialist; Paul Kjellander, Administrator; C.L. "Butch" Otter, Governor. Electronic subscriptions are available by contacting the editor at linda.cawley@oer.idaho.gov or by calling the Idaho Energy Hotline, 1-800-334-SAVE.